

REMARKS**I. Status of the Claims**

Claims 18-20, 22-29, 35, 37-39, and 42 are currently pending in the Application. Of the remaining claims, claims 18, 35, and 42 are in independent format. Claims 19-20 and 22-29 depend
5 from independent claim 18, and claims 37-39 depend from independent claim 35.

Independent claims 18 and 35 recite a "microphone element for receiving second sound waves . . . and for producing a fourth electrical signal based on the second sound waves." Claims 18 and 35 also recite "an electro-optical shutter . . . for receiving [a] first modulated light signal and modulating the first modulated light signal to produce [a] second modulated light signal, wherein
10 the second modulated light signal is representative of the fourth electrical signal," which, as recited, is "based on . . . sound waves."

Independent claim 42 recites "an electrical microphone for receiving second sound waves representative of . . . second audio and for producing a fourth electrical signal based on the second sound waves representative of the second audio." Claim 42 also includes "a liquid crystal display
15 element electrically connected to the electrical microphone for receiving [a] first modulated light signal along a second optical path from the optical splitter and modulating the first modulated light signal to produce [a] second modulated light signal, wherein the second modulated light signal is representative of the fourth electrical signal," which, as recited, is "based on . . . sound waves."

The present Response is intended to be fully responsive to the rejections raised by the
20 Examiner and is believed to place the application in condition for allowance. Further, Applicants do not concede any of the Examiner's rejections or comments not particularly addressed. Favorable reconsideration and allowance of the application is respectfully requested.

II. Responses to Section 103 Rejections

The Examiner rejected claims 18-20, 22-24, 29, 35, and 37-39 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. US2001/0034253 granted to Ruschin ("*Ruschin*") in view of U.S. Patent No. 5,812,295 granted to Kitasagami ("*Kitasagami*") and U.S. Patent No. 6,055,500 granted to Terui ("*Terui*"). The Examiner rejected claim 42 under 35 U.S.C. § 103(a) as being unpatentable over *Ruschin*, *Terui*, *Kitasagami*, and U.S. Patent No. 6,154,301 granted to Harvey ("*Harvey*"). Applicants respectfully traverse the Examiner's rejections of these claims based on the following arguments.

No Motivation to Combine References

Under section 103, the teaching of references can be combined only if there is some suggestion or incentive to do so. It is not enough that the references could be combined in the manner suggested by the Examiner; the prior art must also suggest the *desirability* (and thus the obviousness) of the combination. M.P.E.P. § 2143.01; *In re Lee*, 277 F.3d 1338, 1342-43 (Fed. Cir. 2002) (stating that rejections under 103 must be based on evidence); *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Thus, the Examiner can only meet the burden of establishing a *prima facie* case of obviousness by showing some objective teaching in the prior art, or in the knowledge generally available to one of ordinary skill in the art, that would lead that individual to combine the relevant teachings of the references. Applicants respectfully submit that the Examiner has not established the requisite *prima facie* case of obviousness under M.P.E.P. § 2143, for at least the reasons set forth below.

It is improper to combine *Ruschin* with *Terui*, for at least the reason that there is a lack of teaching or suggestion to combine those references, either in the references themselves or in the knowledge generally available to one of skill in the art. In the pending Office Action, the Examiner

stated that “[t]he invention of Ruschin is intended to transmit a signal representative of a sound received from the microphone to [the] electro-optic interface unit.” Office Action, p. 18. The Examiner then proceeded, without explanation, to combine *Ruschin* with *Terui*, stating that “Ruschin as modified [by being combined with *Terui*] uses the optical shutter . . . to produce a signal representative of a sound from the microphone.” *Id.* Nowhere, in the cited portions or elsewhere, did the Examiner or the cited references state the desirability of making such a combination, however.

To the extent relevant to Applicants’ claimed embodiments, *Ruschin* merely teaches using a LED to transfer voice information. Nowhere does *Ruschin* discuss implementing an electro-optical shutter.

Terui teaches a means to transfer voice (and data) information from portable equipment to desktop equipment. *Terui*, col. 3, lines 30-35. To transfer the information, a user places the portable equipment on the desktop equipment. This action trips a reed switch 25 (shown in Fig. 1) and the reed switch 20 (also shown in Fig. 1). *Id.* col. 6, lines 17-28. Once the reed switch 20 (also called a “transmission [or “transfer”] enable signal reception means” in *Terui*) has been activated, the desktop outputs a transmission enable signal to permit transmission of voice information stored in the portable equipment. *Id.* col. 6, lines 19-36. As shown in Figure 1 of *Terui*, *Terui* transmits voice information using other components of the portable and desktop equipment, an LED 19 and a PIN diode 22. *Id.* col. 6, lines 31-34.

In *Terui*, the reed switch 20 is switched by a “transmission enable signal output means.” *Terui*, col. 9, lines 65-67. In Figure 1 of *Terui*, the transmission enable signal output means is an electromagnet 24. *Terui* describes another embodiment of the transmission enable signal output means as an electro-optical shutter with a PIN diode or phototransistor. *Terui*, col. 9, line 65 – col.

10, line 23. Thus, *Terui* teaches using an electro-optical shutter with a phototransistor or PIN diode as a switch to convert light to a simple electrical signal to initiate information transfer.

The Examiner takes *Terui* out of context by equating a simple switch used to send an electrical signal with using an electro-optical shutter to transmit voice information. *Terui* does not disclose, teach, or suggest using an electro-optical shutter to transfer voice information. More specifically, *Terui* does not teach an electro-optical shutter electrically connected to an electrical microphone for receiving a first modulated light signal and modulating the first modulated light signal to produce a second modulated light signal, wherein the second modulated light signal is representative of a fourth electrical signal, as recited in each of Applicants' independent claims.

Indeed, the Examiner admitted that *Ruschin* and *Terui* are directed to solving different problems. According to the Examiner, "Ruschin is intended to transmit a signal representative of a sound received from the microphone . . . not to use the optical shutter as a transmission enable signal output because the invention of Ruschin is not intended to transmit a transmission enable signal output." Office Action, p. 19 (emphasis added). Therefore, even according to the Examiner, there is no suggestion or motivation to make the Examiner's proposed modification.

Even if *Terui* and *Ruschin* were to be combined together, the logical result of the combination would *not* be the invention that is recited in Applicants' claims, since neither reference suggests using an electro-optical shutter to transmit voice information. Rather, the logical result of such a combination would be that when the microphone 26 of *Ruschin* receives sound waves representative of audio, an electrical signal will be generated that would trip an electro-optical shutter switch (as described by *Terui*). The tripping of the electro-optical shutter switch would then allow (or not allow) the transmission of light through the electro-optical shutter. The combination of *Terui* and *Ruschin* would not result in the modulation of light by the electro-optical shutter, and

specifically would not result in a modulated light signal representative of sound waves (or representative of an electrical signal based on sound waves).

In contrast, Applicants' independent claims 18 and 35 recite:

an electro-optical shutter electrically connected to [an] electrical microphone for receiving [a] first modulated light signal and modulating the first modulated light signal to produce [a] second modulated light signal, wherein the second modulated light signal is representative of [a] fourth electrical signal ["based on . . . sound waves" received by a microphone].

Applicants' independent claim 42 is similar but recites a liquid crystal display element as a specific embodiment of the electro-optical shutter. Therefore, as recited in Applicants' independent claims, Applicants' electro-optical shutter uses electrical signals (based on sound waves) to modulate a first modulated light signal to produce a second modulated light signal. The second modulated light signal in Applicants' claims is then demodulated "to produce a second electrical signal representative of second audio."

Because the Examiner has not pointed to any objective evidence in the art that suggests combining *Ruschin* with *Terui*, and because the combination of *Terui* and *Ruschin* would logically not result in Applicants' claimed invention, Applicants submit the Examiner has not made out a *prima facie* case of obviousness. Therefore, Applicants respectfully submit that the rejections should be withdrawn and all of the pending claims should be allowed.

Without addressing the merits of the Examiner's statements regarding the pending dependent claims 19-20, 22-24, 29, and 37-39, which are not conceded, Applicants point out that these claims depend from and include all of the limitations of claims 18 and 35. Therefore, Applicants' dependent claims distinguish the cited references for the same reasons discussed above with regard to independent claims 18 and 35. Applicants respectfully request that the Examiner withdraw the rejections of the pending dependent claims.

CONCLUSION

In light of the above amendments and remarks, Applicants submit that the present application is in condition for allowance and respectfully requests notice to this effect. The Examiner is requested to contact Applicants' representative below at (312) 913-0001 if any questions arise or if he may be of assistance to the Examiner.

Respectfully submitted,

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